

- 40 -

**ABSTRACT**

The present invention provides structures and methods for delivering a complex slow-rise defibrillation waveform wherein in lieu of the simple truncation of prior art defibrillation waveforms, when a predetermined amplitude is reached for an ascending waveform (e.g., a ramp waveform), the waveform transitions to an exponential decay portion for a period of time and at the expiration of the period of time, a truncation occurs. In the event that a first complex bi-phasic ramp wave form is implemented, a second opposite polarity waveform may be delivered. Said second waveform is preferably of similar shape to the first waveform, but of a less magnitude amplitude, although the second waveform may comprise a traditional waveform. The implementation and feasibility of the waveforms according to the present invention in an ICD or an AED is relatively simple while providing significant advantages not previously known or used in the prior art.